Vancouver

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VANCOUVER B.C. COLLEGE, CANADA

LIONS GATE BRIDGE

Vancouver *Canada*

LIONS GATE BRIDGE

Vancouver Canada

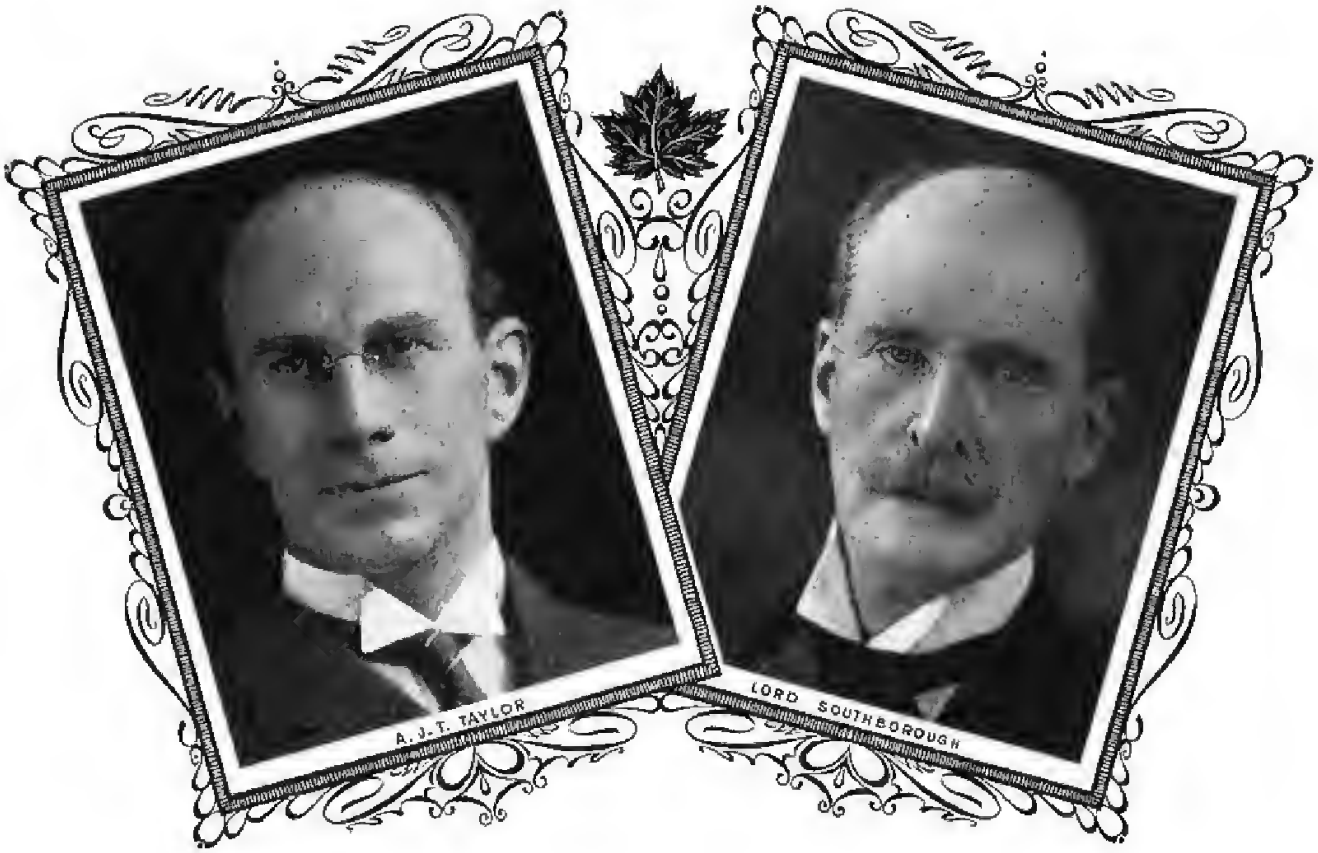
L'Envoi

When Earth's last picture is painted, and the tubes are twisted and dried,
When the oldest colors have faded, and the youngest critic has died,
We shall rest, and, faith, we shall need it—lie down for an aeon or two,
Till the Master of All Good Workmen shall set us to work anew!

And those that were good shall be happy: they shall sit in a golden chair;
They shall splash at a ten-league canvas with brushes of comet's hair;
They shall find real saints to draw from—Magdalene, Peter, and Paul;
They shall work for an age at a sitting and never be tired at all!

And only the Master shall praise us, and only the Master shall blame;
And no one shall work for money, and no one shall work for fame;
But each for the joy of the working, and each, in his separate star,
Shall draw the Thing as he sees It for the God of Things as They Are!

—Rudyard Kipling.



The Lions Gate Bridge, Vancouver

It was indeed with pleasure that I accepted an invitation to write a foreword to this attractive brochure on the Lions Gate Bridge. My regret is that these lines should be penned in London and not in Vancouver. As Chairman of the Company responsible for the undertaking, I had hoped to be present in the city during the days when the splendid bridge was first thrown open for public traffic. This ambition was defeated by ill health and I have to be content to rest on past reflections, such as the opening of Stanley Park in 1888 by my good friend and chief, Frederick, The Right Honourable The Earl of Derby, then Governor-General of the Dominion. Another consolation is founded on the knowledge that the President and my colleagues on the Board of the First Narrows Bridge Company have enjoyed the honour and pleasure of witnessing the successful completion of the most attractive work which has engaged their interest and attention. The foreword need not dwell upon the design, the beauty or detail of the Bridge and its environment; that is for the brochure itself and its authors have well performed their task. On the other hand, a few words may well be written on the origin and inception of the splendid span which now links Stanley Park with the beauties of Capilano and the vast country to the northwards. To the great credit of the engineers, the contractors and of the workmen, the bridge itself may be said to have been constructed "in double quick time," but the period of its inception was long and tedious. Several very prominent and responsible men interested in Empire development, determined to back the scheme for a Narrows Bridge by giving it political and financial support and their action was in the end decisive, but as so often happens in movements of this kind, a great deal of time was cut to waste clearing away opposition and in obtaining the necessary franchises and authorities. The ultimate success was largely due to the good offices of the present Prime Minister of Canada, and to him our thanks are due. Vancouver is already an Empire City, and without doubt it is destined to become one of the trading centres of the world. The particularly interesting and significant work portrayed in this pamphlet will be held to mark an important chapter in the history of British Columbia, and I would venture to ask those who obtain a copy of the brochure of the Bridge to put it among their Household Gods as a souvenir of an historic undertaking worthy of retention during the years to come.

Southborough

THE RT. HON. LORD SOUTHBOROUGH, P.C., G.C.B., G.C.M.G., G.C.V.O., K.C.S.I.

THE LIONS GATE BRIDGE ENTRANCE, LOOKING NORTH.

LIONS GATE BRIDGE

Vancouver Canada

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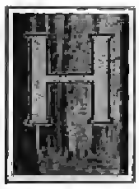


ISTORY records that it was on June 13, 1792, that the first white men sailed through the First Narrows into what today is known as Burrard Inlet, the mighty natural harbour of the bustling Port of Vancouver.

British seamen they were, from H.M.S. *Chatham* and H.M.S. *Discovery*, under command of Capt. George Vancouver, R.N., who not many years before had sailed with Capt. James Cook, and was now following in the tradition of that bold seadog, the intrepid tradition of Anson, of Frobisher, and of Drake.

Today, 147 years after, were the ghosts of George Vancouver and his men to come this way again, their astonished eyes would behold a transformation beyond their wildest imaginings.

On that June day in 1792 they camped on the edge of the primeval forest where today stands a great and gracious city. The towering cedars and the hemlocks have been supplanted by skyscraping buildings; the rocky, shelving beach by the piers, wharves and jetties of a modern seaport; and the tiny canoes of the welcoming Indians by the port's busy traffic.

Most amazing of all, this web of steel spanning the narrow fairway, stately as a cathedral, enduring as the hills above it, yet delicate and airy as a song. The hearts of these old-time naval men would leap in salute to the noble skyward sweep of its cables, to the daring of its twin 360-foot towers, the slim, straight roadway of its span, 1550 feet between the towers.

When they had done with admiring it they would then have agreed that it is a fitting portal to an Empire City, a fit bridge to span one of the largest natural harbours in the world, a harbour with a total shoreline of 98 miles, a total area of 48 square miles.

That harbour is the harbour of Vancouver, named for this same explorer-sailor, George Vancouver. The bridge is the Lions Gate Bridge, named after the popular title of these First Narrows—Lions Gate.

Lions Gate Bridge is a symbol and a memorial: Symbol of Empire, memorial to the men of faith and foresight who made its construction possible.

These men include, besides prophets and leaders of opinion in Vancouver who struggled long years to attain their ideal of a bridge to connect the City of Vancouver on the south side of this harbour with its North Shore suburbs, and the group of British capitalists whose financial backing made the ideal at last attainable.

That ideal took form in the longest suspension bridge in the British Empire, the longest suspension bridge of stranded type in the world.

The history of the bridge, as an idea, goes back to 1890, when G. G. Mackay, a bridge builder and dreamer of dreams, foresaw the possibilities of a span across the Lions Gate and made bold to predict its building.

Vancouver, as a city, was then four years old, too busy bursting from its swaddling

clothes to be worried over the long future. But there were some men who remembered, and as the city continued to grow, leaping the wide inlet that Vancouver had named after his friend, Sir Harry Burrard, and establishing new communities on the North Shore, the idea revived.

Transportation problems were created by this leap across the harbour, but for the time ferry services, and a smaller bridge at the Second Narrows, some miles to the east of the Lions Gate, sufficed.

It was not until 1924 that the idea of the First Narrows span began to take concrete form. Two years later there were two rival companies in the field seeking franchises. They were the First Narrows Bridge Company and the Lions Gate Bridge Company, both promoted by Vancouver men.

Opposition to the idea was not lacking. Beauty lovers protested that the construction of the bridge would result in the desecration of picturesque Stanley Park, through which its approaches must run to reach the city. This 1000-acre playground, named for Lord Stanley, afterward Earl of Derby, and a formed governor-general of Canada, was then, and is still, Vancouver's delight and pride.

Shipping interests chimed in with the assertion that the span would constitute a menace to navigation and cause mariners to shun the Port of Vancouver as they would a plague.

For a time these views prevailed over common sense. In a plebiscite submitted to the citizens of Vancouver in 1927 the proposal for a bridge was defeated. And for three years the matter rested.

One good result of the setback was the merging of the rival bridge companies in 1930. They became known as the First Narrows Bridge Company Limited. It is this company which, after overcoming many obstacles, is able today to point to a task well done.

In 1932, Mr. A. J. T. Taylor, a consulting engineer and a native son of British Columbia, with his partner, Mr. John Anderson, and their colleagues, Lord Southborough and the late Mr. W. S. Eyre, acquired the First Narrows Bridge Company Limited, and in 1933 the citizens of Vancouver endorsed the bridge by an overwhelming majority. Three more years had to pass, tedious years, until all opposition was overcome and the Dominion Government had satisfied itself through the reports of its experts as to the safety and desirability of the bridge. But approval at last was given and Mr. Taylor then secured the funds to actually build the bridge.

The directors of the First Narrows Bridge Company Limited are the Right Honourable Lord Southborough, G.C.B., G.C.M.G., as chairman; Mr. Taylor as president and engineer-in-chief; Mr. John Anderson, Mr. Christopher Spencer, Mr. W. G. Murrin, Mr. Arthur Mark James English, Mr. L. Peter Candler, and Major P. A. Curry, general manager. Additional particulars of the Company appear further in this Brochure.

Approval by Ottawa was given on April 30, 1936. On January 21, 1937, the company let the first contracts for the steel work. The people of Greater Vancouver thrilled to the news. On July 7 of the same year the first sod was turned. A dream was in the process of realization.

In its realization, the Lions Gate Bridge has become more desirable than the dream itself. Its beauty begins with its southern approach, a thirty-foot concrete paved road

Vancouver from the Air, Looking Northwest to the Lions

which winds for 6500 feet through Stanley Park, opening up unsuspected beauties in the primeval forest.

Along the course of the road, towering trees provide magnificent vistas. There are three reinforced concrete structures crossing over this road. These accommodate traffic through the park without interfering with the traffic over the bridge.

The north approach is from lovely Marine Drive in West Vancouver Municipality, and is reached by means of an overhead crossing which leads to the North Plaza and the toll booths. Beyond this overhead crossing the roadway follows a fill section 1000 feet long to a steel viaduct, 2200 feet long, built on a 4.8 per cent grade, to the north end of the suspended span.

If the south approach has its beauty, the north approach can at least match it. From the bustling heart of Vancouver's downtown business and shopping district a 15-minute motor ride brings one to the lovely residential suburb of West Vancouver, stretching

West Vancouver Shoreline, Looking East

for miles on the lower slopes of the North Shore mountains. Beyond this, on the upper levels, with the stir and activity of Vancouver spread out to the view, but with its noises and turbulence stilled by distance, lies the beautiful new residential area of the Pacific Coast, Capilano Estates.

Capilano Estates is the creation of British Pacific Properties Limited, developed by the same interests that provided the capital for the Lions Gate Bridge.

The two enterprises are twin achievements, the bridge of modern engineering science, the Estates of modern landscaping skill. In the centre of the residential area British Pacific Properties have completed an eighteen-hole golf course that is hailed by experts as one of the world's finest.

Here the Capilano Golf and Country Club has its splendid club house, a building designed to fit into the setting of a course that is unique in scenic interest. From its balconies magnificent views can be had of the harbour, of Mount Baker in the State of Washington, of the Gulf Islands.

The Lions Gate Bridge from Stanley Park

The entire region to which the bridge gives immediate access has been described as among the most beautiful in the world. West Vancouver often has been referred to as "the North Pacific Riviera." Capilano Estates preserves and accentuates these natural beauties. To the upper levels, fine roads rise on grades that are imperceptible. Indigenous trees, including the fir, the cedar, and the flowering dogwood, screen the well-chosen homesites. Beautiful homes, already beginning to dot the Estates, look down upon a panorama that has never failed to draw admiring comment from visitors from all corners of the world.

Beyond the Estates, rising to summits 4000, 5000, 6000 feet and more in height, are the peaks of the Coast Range, a backdrop for the communities spread out below, their densely clad slopes providing playgrounds, summer and winter, for lovers of the out-of-doors.

And there, in the midst of the peaks, lie

THE BRIDGE FROM THE NORTH TOWER DURING CONSTRUCTION

the Lions, twin guardians of the harbour and of the bridge, their peaks towering 5400 feet above sea level, eternally capped with snow.

To carry the traffic that such natural attractions inevitably create when made accessible, the Lions Gate Bridge had to be built to endure. Messrs. Monsarrat & Pratley, of Montreal, who designed the bridge in association with Mr. W. G. Swan of Vancouver and in collaboration with Messrs. Robinson and Steinman of New York, decided to use the latest method of utilizing rope strands to form the main cables, replacing the older method of using bridge wires laid parallel to each other.

The suspended span, as already has been said, is the largest suspended span in the British Empire. It has a total length of 2778 feet, consisting of a 1550-foot main span and two equal side spans of 614 feet. The fears of shipping men that the bridge would jeopardize large vessels entering the Narrows have

The Stanley Park Entrance, Looking North

been set at rest by a roadway that, at mid-span, gives a minimum clearance of 200 feet above maximum high water. With its approaches, the bridge has a total length of 5978 feet.

The roadway over the bridge is twenty-nine feet wide, providing accommodation for three lines of vehicular traffic. At each side is a four-foot walk for pedestrians. At night the roadway is illuminated by sixty sodium vapor lamps of the latest type, each of 10,000 lumens.

Foundations for the suspended span are two anchor piers, one at each end of the main cables, and two main piers, which support the two towers.

It was decided to make the anchor piers of the gravity type, depending on the friction of their mass upon the soil for stability. However, owing to the difference in subsoil conditions between the two sides of the channel, the construction of the anchors had to differ considerably.

The south anchor, on the Stanley Park foreshore, is founded in a dense deposit of glacial drift, so compact that it was possible for the engineers to build the entire block forty-four feet deep, without the necessity of using timber shoring.

The north anchor, on the other hand, had to be constructed on a deposit of sand and coarse gravel, in which, furthermore, the water line is well above the base of the pier.

The Capilano Golf Course from the Air, Looking North

Here, the main part of the pier below the ground line is a concrete caisson thirty feet wide by seventy-eight feet long, with a depth of thirty feet. This structure was sunk in the ordinary way by open dredging.

Although both anchors, as mentioned earlier, are essentially of the gravity type, the engineers have increased their stability greatly by so constructing the back caissons that they bear laterally against masses of virgin soil, which will resist a considerable pull.

The two main piers, likewise, were constructed by entirely different methods. On the south side the site chosen for the pier is a deposit of homogenous sandstone. It was possible for the engineers to seat two circular caissons in depressions previously excavated by submarine methods.

The caissons were sealed to their rocky bed by using tremie concrete deposited around the cutting edges and then pumping the water out of the caissons. This done, it was possible for the workmen to complete their duties in the open.

This method was unusual enough to shatter precedent. It resulted in a considerable saving over the established pneumatic method, beside proving so successful as to reflect great credit upon Messrs. Stuart Cameron & Company Limited, the contractors in charge of the substructure contract.

Material in which the north main pier is located is sand and gravel. At low tide the

THE CAPILANO GOLF CLUBHOUSE, OPENED MAY 17TH, 1939

site is just above low water level, the average tidal range being thirteen feet.

Instead of two caissons as in the case of the south pier, that on the north side has only one to carry the two legs of the immense tower from which the cables are suspended. Forty-eight feet wide by 117 feet long, the caisson extends eight feet below high water level.

Piers and anchors alike had to be of enormous strength, for they must support between them 17,888,000 pounds of structural steel, 2,010,000 pounds of cable wires and castings, and forgings weighing another 375,000 pounds.

The structural steel was fabricated at Vancouver and in Eastern Canada, and practically all of it was delivered to the job on scows.

Following the erection of the 2926 tons of steel in the viaduct approach on the North Shore, the task of erecting the superstructure of the bridge itself began February 2, 1938, when the first steel was hoisted to the main towers. The work proceeded in excellent time. On August 12, workmen were putting the finishing touches to the floor system.

Erection of the south tower proceeded first. The engineers made use of the creeper

TAYLOR WAY, THE ENTRANCE TO CAPILANO ESTATES

traveller method of construction, one traveller sufficing for the two towers, as the work on the north tower followed completion of the other. The towers, involving the handling of 2056 tons of steel, were completely finished on April 25.

On May 2 it was possible to begin the work of laying the catwalks and hoisting the cables.

The early morning saw history made. For the first time since the Port of Vancouver was created, the fairway in the First Narrows was closed to shipping.

While engineers superintended operations from a fast launch, a great barge moved ponderously from the shadow of the south pier. From a huge reel at its stern, the cables for the catwalks were slowly and carefully paid out.

So expeditiously was the work done, despite the hazards of tide and currents, that the fairway was open again to traffic in little more than an hour.

The catwalks were completed and ready for service within eight-and-a-half days.

Next step was the hoisting of the two main cables. Each cable is made up of sixty-one 1-7/16 inch diameter rope strands, made of Roebling bridge wire by the Anglo-Canadian Wire Rope Company. They were pre-stressed, measured and socketed by the

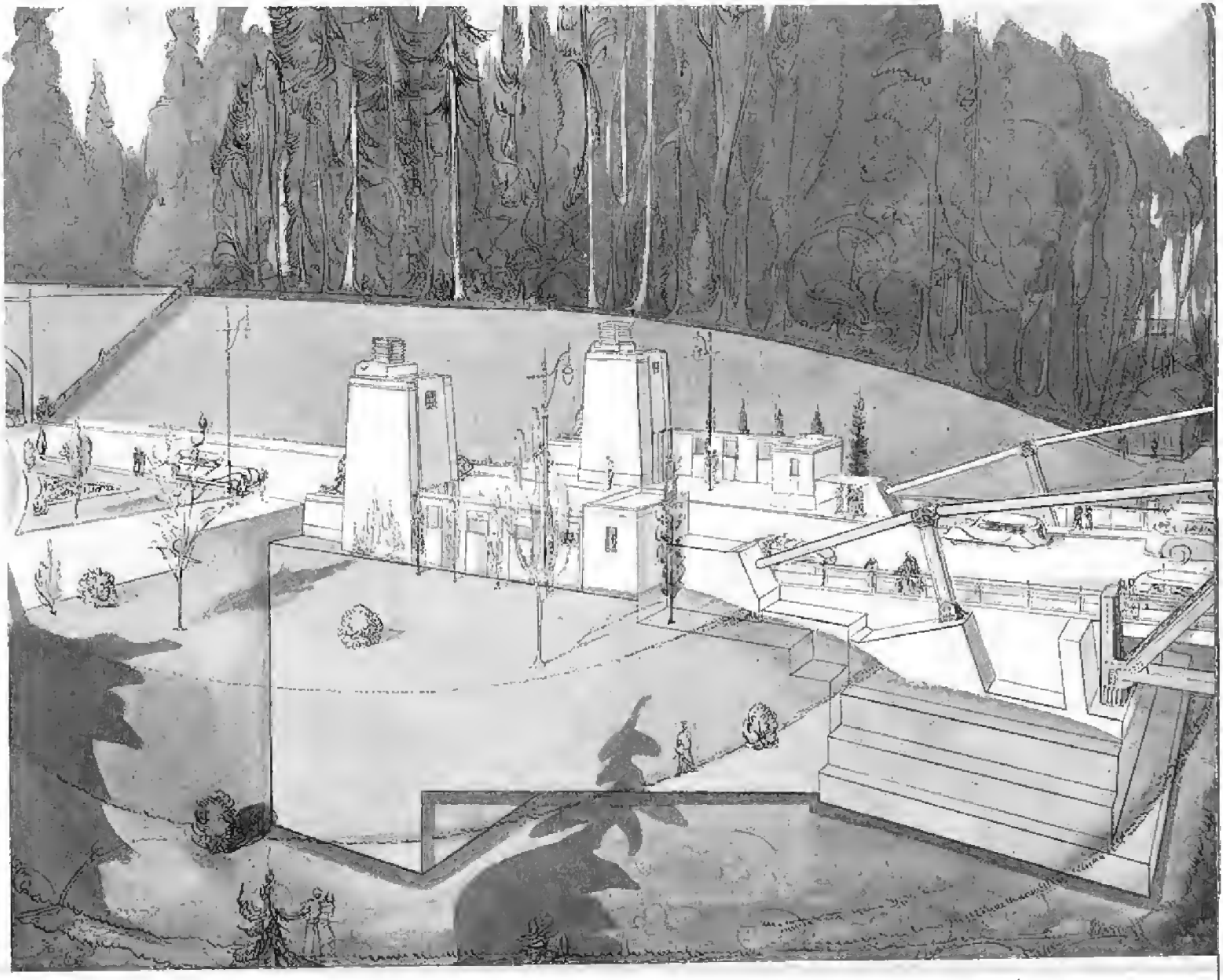
"The Lions" on Hollyburn Ridge, West Vancouver

Dominion Bridge Company in one of its Eastern Canada plants.

The cables were pulled across the catwalk, attached at both ends, and lifted into their saddles, all in sixteen working days. The long hours of daylight permitted three working shifts, the third shift of each day being devoted to adjusting the strands for length.

It is interesting to note that the maximum rate reached in pulling the cables across the catwalk was approximately eleven tons an hour. The average rate, including time for adjusting the strands, and for delays, was 2.6 tons an hour.

The work continued at a rapid pace. On June 17th the engineers began the work of erecting the stiffener truss sections. There were 174 sections, weighing 1572 tons altogether. The sections for the centre span were attached to the suspender ropes after being hoisted from barges, by means of a steam hoist on the shore. For the two side spans, the sections were hoisted into place



A Phantom View of the South Main Bridge Anchorage

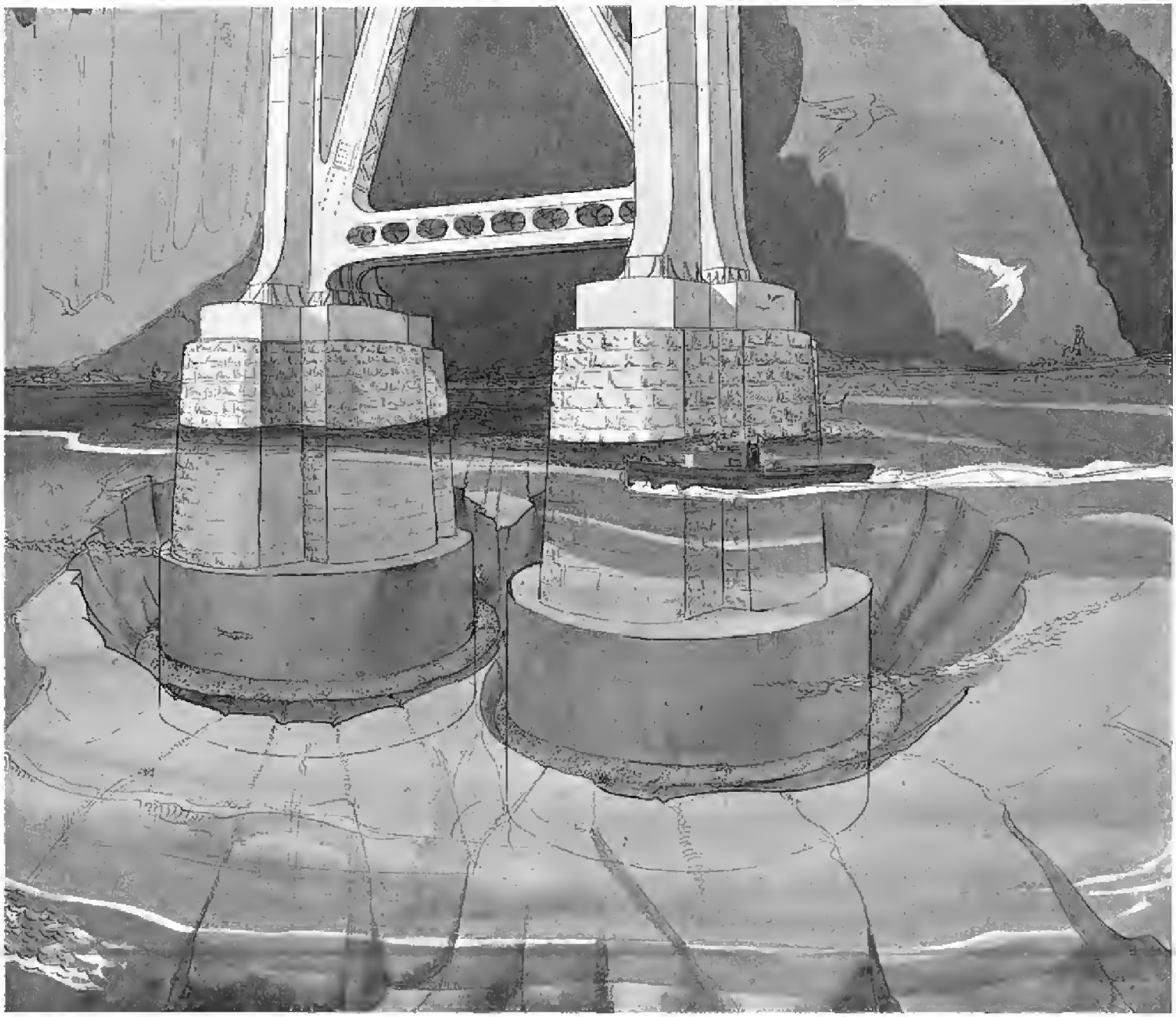
simultaneously from railroad cars. In twelve working days this part of the mighty task was done.

By July 1st it was possible to commence the laying of the floor system. First came the floor beams, then the stringers and welded sections of the tee grid.

The pouring of the three-inch concrete filler to complete the tee grid system was a relatively simple job, for the welded sections acted as forms for the slab. The pouring was done in sections, working simultaneously from either end of the span, so that unequal loading was avoided and the towers were not overstressed, nor the cables distorted.

And now, with the dead load on the cables completed, workmen wrapped the cable strands with soft annealed wire, which was given three coats of paint. The Lions Gate Bridge stood ready for the finishing touches.

It was opened to traffic on November 12th, 1938. The total cost, including approaches, the Stanley Park roadway, franchises and



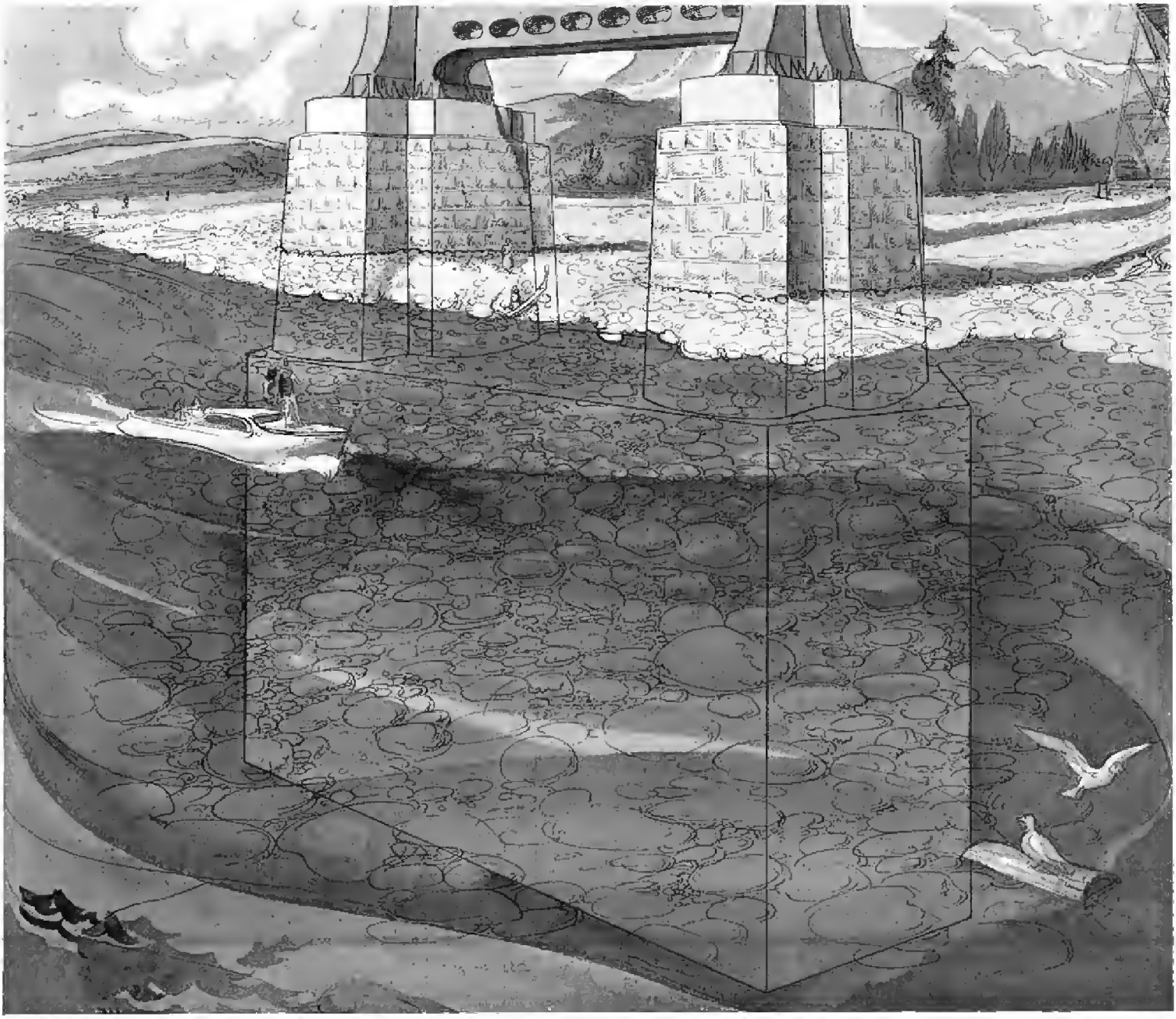
A Phantom View of the South Pier Foundations

right-of-ways, as well as providing ample funds for working capital, amounted to $5,700,000.

Some idea of the magnitude of this imposing feat of engineering already has been given. To help the imagination—if help be needed—here are some further figures.

The total length of the wire used in the cables is 4750 miles. Each cable is 13¼ inches in thickness and there are 2867 wires in each cable. The maximum tension of each cable is 6,400,000 pounds.

Reinforcing steel used weighs 1,664,000 pounds. Concrete for the entire project amounted to 50,000 cubic yards, and granite facings on the piers total 35,000 cubic feet. Workmen applied 5000 gallons of paint in the field.

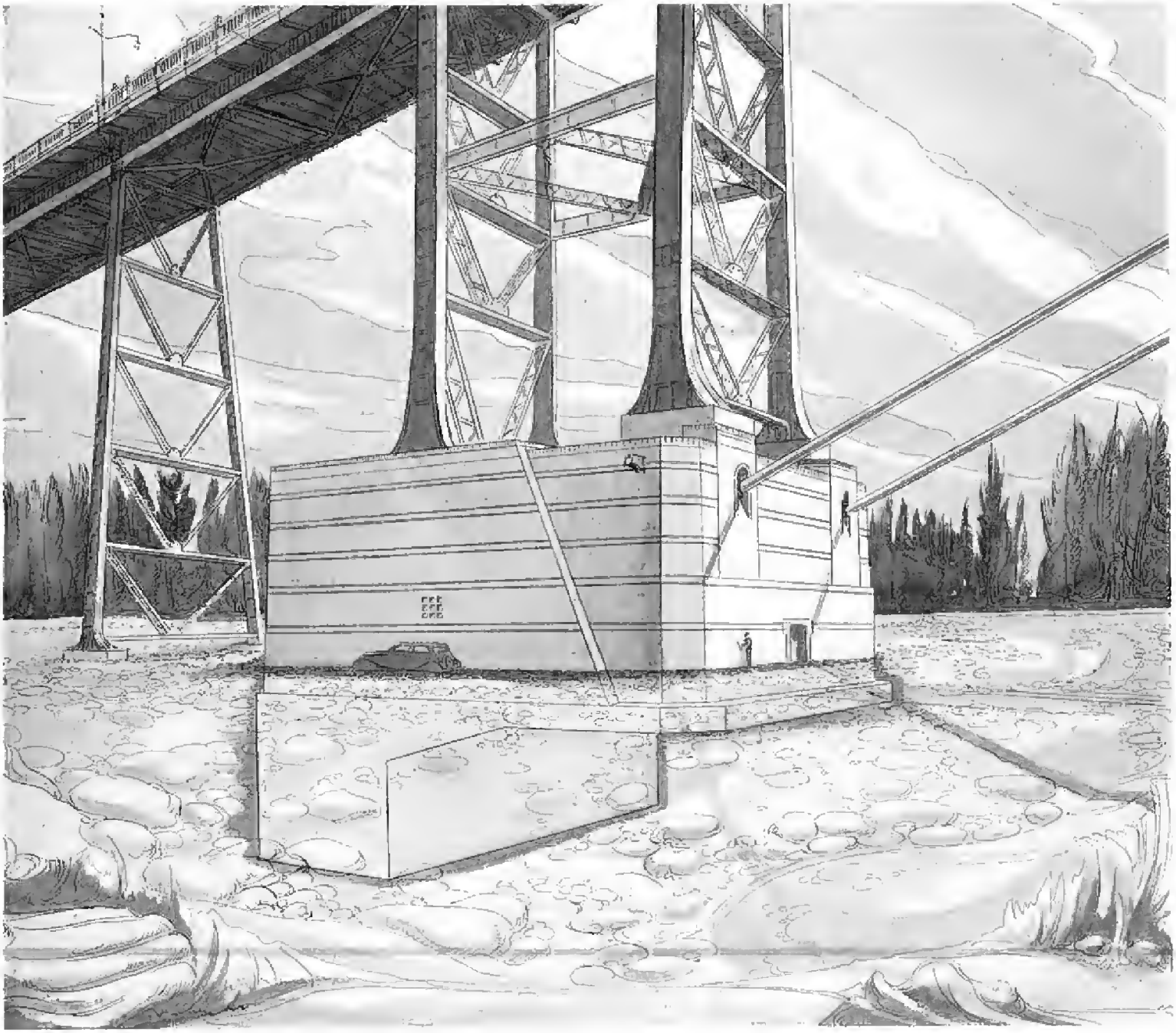


A Phantom View of the North Pier Foundation

The Lions Gate Bridge is an embellishment worthy of a province which in itself forms an empire of vast potentialities, immense natural resources, and unsurpassed scenic grandeur.

Under the graceful span and through the historic First Narrows passes the rich commerce of the city that has been aptly named "Britain's Gateway on the Pacific." Freighters and tramps from all the Seven Seas, stately ocean liners plying to the ports of Asia and Australasia, coastal vessels, pleasure boats, and a host of lesser craft—the Lions Gate knows them all.

You pass under the Lions Gate Bridge on your passage to Victoria, the charming capital city of the Province of British Columbia, 80 miles to the southwest, across the Gulf of Georgia. Here, in Victoria, where are located the impressive and beautiful parliament



A Phantom View of the North Anchorage

buildings of the province, the delighted visitor finds an England far across the seas, a city of beautiful gardens, leafy lanes, close to a quiet and lovely countryside.

Victoria and its environs hold many symbols of Empire. At Esquimalt is located the Pacific Coast base of the Royal Canadian Navy, the establishment of the permanent militia, an immense graving dock, one of the largest in the world, and the focal point of Canada's new and formidable Pacific Coast defences which guard the entrance to the great land-locked waterways upon which the industrial and commercial centres of the Canadian Pacific slope are for the most part situated.

Here, too, is a hostelry of world-wide repute, the splendid and stately Empress Hotel of the Canadian Pacific Railway system. Surrounded by beautiful English

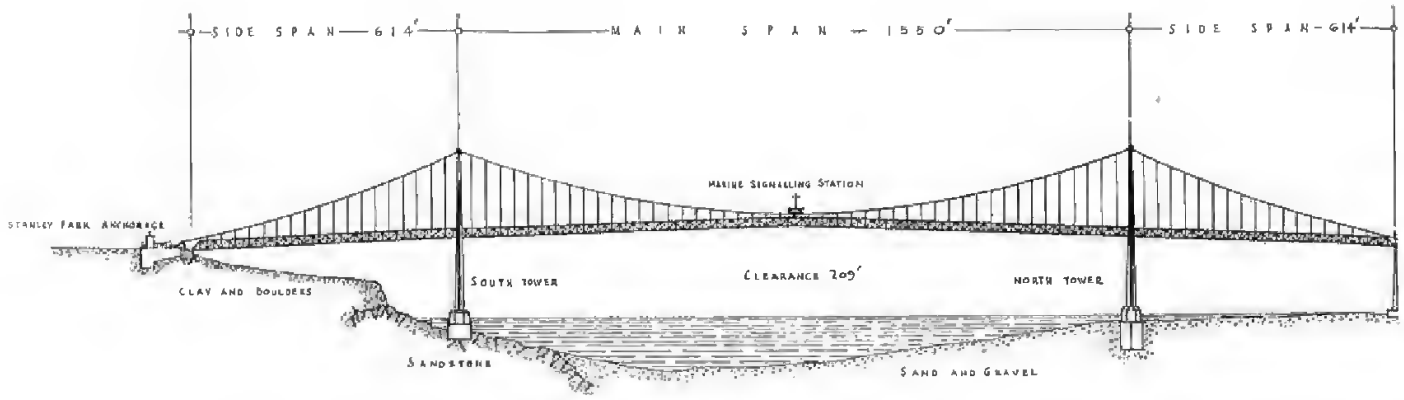
Capilano Golf Course Viewed from the Club House Looking North.

formal gardens and park-like lawns, the turrets and spires of the Empress are a landmark to every traveller who enters Victoria by sea.

Its quiet, restful atmosphere is typical of Victoria and distinguishes it from the ordinary hotel. Architecturally, too, it fits neatly into Victoria's unique "Englishness," for, with its 570 rooms, it is a model on a massive scale of a typical English manor house.

Here travellers from the ends of the world have met and met again, served by its quiet-mannered staff, entertained by its famed string concert trio, and have delighted in its exquisite cuisine, its luxurious public rooms, its conservatory and gardens, and its Crystal Pool.

But let us return to Vancouver, that city whose citizens with quiet pride will tell you is "the most beautiful city in the world."



CONSTRUCTION OF

THE Lions Gate structure is a suspension-type bridge designed by Messrs. Monsarrat & Pratley of Montreal in association with Mr. W. G. Swan of Vancouver and in collaboration with Messrs. Robinson & Steinman of New York on the latest method of using rope strands to form the main cables, replacing the older method of using bridge wires laid parallel to each other. The bridge is approached on the south over a newly constructed 30-foot concrete paved road 6500 feet in length, passing through Stanley Park. There are three reinforced concrete structures over this approach road which accommodate the traffic through the park without interfering with the traffic over the bridge route. The north approach to the suspended span from Marine Drive is reached by means of an overhead crossing which leads to the North Plaza and toll booths; beyond Marine Drive there is a 1000-foot fill section followed by a 2200-foot structure steel viaduct on a 4.8 per cent grade to the north end of the suspended span.

The suspended span has a total length of 2778 feet, made up of a 1550-foot main span and two equal side spans of 614 feet each. The minimum clearance at mid-span is 200 feet above maximum high water; the roadway is 29 feet wide, with two four-foot sidewalks.

The foundations for the suspended span are made up of two anchor piers, one at each end of the main cables, and two main piers supporting the two towers. While both anchor piers are of the gravity type, depending upon the friction of their mass on the soil for stability, their construction differs considerably. The south anchor is founded in a dense deposit of glacial till, so compact that it was possible to build the entire block, 44 feet deep, without the aid of timber shoring. The north anchor is constructed on a deposit of sand and coarse gravel in which the water line is well above the base of the pier. The main portion of the pier below ground line is a concrete caisson 30 feet wide by 78 feet long by 30 feet deep. This structure was sunk in the ordinary way by open dredging. (While both anchors are, as just mentioned, essentially of the gravity type, their stability is greatly increased by the back caissons bearing laterally against a considerable mass of virgin soil which will resist a very considerable pull before the shearing values are exceeded.)

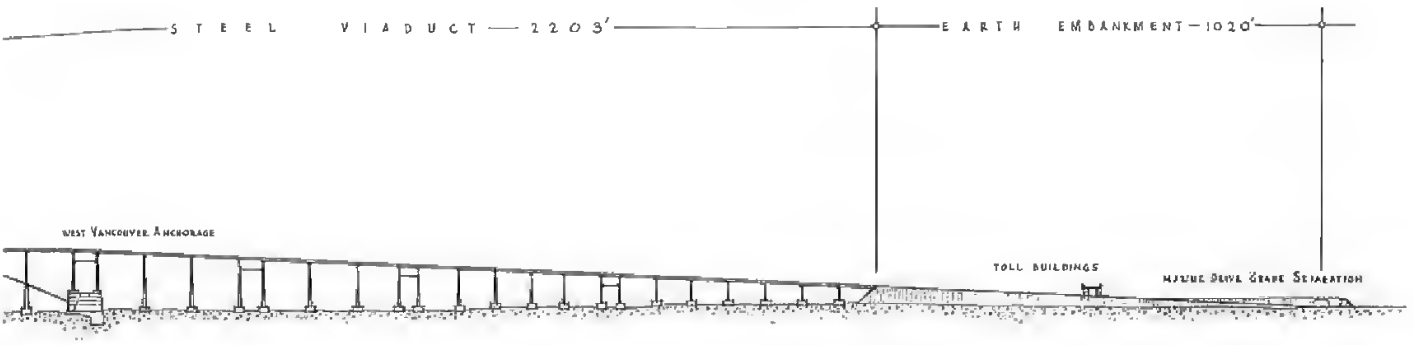
The two main piers were constructed by entirely different methods, because conditions differ widely on opposite sides of the channel. The site for the south main pier is a deposit of homogeneous sandstone which made it possible to seat the two circular caissons in depressions, previously excavated by subaqueous methods, and to seal these to the rock by using tremie concrete deposited around the cutting-edges, after which the caissons were de-watered by pumps, permitting the completion of the work in the open. The method employed, even though lacking in precedent, was very successful, and resulted in a considerable saving over the established pneumatic method. Credit for this is due to Messrs. Stuart Cameron & Co. Ltd., the substructure contractors.

The north main pier is located just above low water level at low tide, the average tidal range being 13 feet. The material at the site is sand and gravel. Unlike the south main pier, where a separate foundation is provided for each tower leg, the caisson is of sufficient size to carry the two tower legs. This caisson is 48 feet wide by 117 feet long and extends 80 feet below high water level. The open-dredging method was employed. The pylons for each of the four-tower leg supports are faced with granite.

The structural steel for the superstructure was fabricated both locally and in Eastern Canada. Practically all fabricated sections were delivered to the job on scows.

The erection of the superstructure divides itself into the following sub-divisions:

Approx. Tons	Subdivision	Time, 1938
2,056	Main towers	Feb. 2 to April 25
1,124	Catwalk, cables, etc.	May 2 to June 7
1,572	Stiffener trusses	June 9 to June 24
2,246	Floor system, etc.	July 1 to Aug. 12
2,926	Viaduct approach	Nov. 1/37 to Apr. 5/38



LIONS GATE BRIDGE

The two towers were erected by the creeping-traveller method, one creeper being sufficient for the two towers, as the erection of the north tower followed immediately on the erection of the south tower.

Remarkable time was made in the erection of the strands, cable bands and suspender ropes. The early morning of May 2 saw the fairway in the First Narrows closed to shipping for the first time in history, to allow the uninterrupted placing of the catwalk cables. There were four cables for each catwalk; these were unreeled from a barge which was slowly towed from the south main pier to the north shore, and when connected to the shore cables, were hoisted from the bottom of the Narrows to their saddles on top of the main towers. The catwalks were completed and ready for service in eight and one-half working days.

The two main cables are each made up of 61 1 7/16-inch diameter rope strands. The cables were made of Roebling Bridge wire by Anglo-Canadian Wire Rope Co. and pre-stressed, measured and socketed at Dominion Bridge Company's plant in Eastern Canada. When assembled in position, these 61 strands were placed in a series of parallel rows, with five ropes in the bottom layer, then 6, 7, 8, 9, 8, 7, 6, and 5 again in the top layer, which cross-section figure is a regular hexagon. Since the ropes had been pre-stressed and measured, it was possible to set them according to pre-figured dimensions, allowing for temperature. All the cables were pulled across the catwalk, attached at both ends and lifted into the saddles, in 16 working days, utilizing the long daylight period by working three shifts, the third shift being used for adjusting the strands for length. Immediately the strands were in place, the cable bands and suspender ropes were placed; this erection being made from the catwalk. The next step was the erection of the stiffener truss sections, which for the centre span, were hoisted from barges by the steam hoist on shore, and attached to the suspender ropes. The sections for the side spans were erected simultaneously from railroad cars. The 174 sections were placed in 12 working days.

Following the truss erection, was the erection of the floor beams and stringers and the welded sections of the tee grid, all in the same manner.

The placing of the three-inch concrete filler to complete the tee grid system was simple, as the welded tees acted as forms for the slab. The addition of weight to the suspended structure was so arranged that the towers were not over-stressed in bending due to unequal loading, nor the cable distorted. The placing of the concrete filler completed the dead load on the cables, after which the cable strands were wrapped with No. 9 soft annealed wire, the hexagonal shape being first transformed into a circular cross-section by oil soaked cedar fillers which were heavily painted with red lead and oil just ahead of the wrapping machine. After wrapping, the cables were given three coats of paint.

STATISTICAL DATA

Main span	1,550	feet
Side spans	614	feet
Viaduct approach	2,199	feet
Roadway width	29	feet
Sidewalks—two—each	4	feet
Total length of project and park roadway	6,114.75	feet
Mid-span clearance above high water	200	feet
Structural steel used	17,888,000	lbs.
Wire for cables	2,010,000	lbs.
Castings and forgings	375,000	lbs.
Total length of bridge wire	4,750	miles
Size of cables	13¼	inches
Number of wires in each cable	2,867	
Maximum tension in each cable	6,400,000	lbs.
Reinforcing steel	1,664,000	lbs.
Paint applied in field	5,000	gallons
Concrete for entire project	50,000	cu. yds.
Granite facing	35,000	cu. ft.
Substructure work started	April 1, 1937	
Superstructure work started	Nov. 1, 1937	
Bridge opened for traffic	Nov. 12, 1938	

Longest suspension bridge in the British Empire.

Longest suspension bridge of stranded type.

Lions Gate Bridge from Stanley Park.

LIONS GATE BRIDGE

Vancouver Canada

The noble span of the Lions Gate Bridge forms an arch of welcome at Vancouver Harbour's very gate—the First Narrows. Painted in International orange and Veridian green, nature's own colors, making a perfect setting that nature herself would seem to have designed with cunning eye for this stately creation of human engineering triumph.

On one side of the Narrows the rugged snow-capped peaks of the Coast Range, lining the north shore of the splendid land-locked harbour; and on the other the majestic, unspoilt beauty of Stanley Park, Vancouver's 1000-acre civic playground.

And yet, only a few minutes away, along a tree-lined, majestic highway cut through the primitive heart of Stanley Park, lies the centre of Vancouver, a great city, with all its modern conveniences.

Within a stone's throw stands the magnificent new Hotel Vancouver, opened this year; the fine Royal Bank Building, and the Marine Building, together with the piers, wharves, railway station and freight yards of the world famous Canadian Pacific Railway.

The City Hall, Vancouver, B. C.

VANCOUVER is the front door of the immense mainland of British Columbia, looking across the Pacific to the teeming millions of Asia, awaiting an hour of destiny which already is striking, for which all its past has been a preparation.

To Vancouver's people the Lions Gate Bridge is not only a bridge but a symbol of conquest, and earnest of future greatness. To the men who made its building possible, Vancouver is grateful; their faith is a justification of her own faith.

Consider Vancouver's short history, and the presence of this bridge across the city's harbour waters takes on an added interest.

Little more than 50 years ago Vancouver was a backwoods settlement. In 1886, when the Canadian Pacific Railway came to link the city with its hinterland and the province to eastward, there were 1000 people here. In that year the city was incorporated, and since then it has looked ever forward. Even the great fire which, in the very year of its founding, wiped out the city's straggling collection of wooden buildings, could not dampen the enthusiasm of the pioneers.

The New Vancouver Hotel, Opened May 25, 1939

Today, with a population in the city proper of 270,000, and 90,000 more in its suburbs, it is Canada's third largest centre of population, and ranks as one of the great cities of the Pacific Coast of the Americas.

A stately city, terminus of two great transcontinental railways, port of call for more than 53 shipping lines, Vancouver exports the products of forest, mine, farm and fisheries, raw and in their finished state. Her 1600 factories, foundries and mills produce an endless variety of goods, including billions of feet of finished lumber, much of which goes to the British Isles.

Vancouver has long been renowned as a city of beautiful homes, a city where owned homes are the rule, a city whose climate is so equable that temperatures below twenty degrees or above eighty are regarded as rare.

Naturally, a city so favorably circumstanced attracts population and wealth. The evidence is in the many tall and splendid buildings—among the largest in the British Empire—which grace its streets. And of these none is more imposing and magnificent than the recently constructed Marine Building, which is another of the holdings of the

THE PARLIAMENT BUILDINGS, VICTORIA, B. C.

same British interests which have built the Lions Gate Bridge and developed the Capilano Estates.

Even more recent in construction is the new Hotel Vancouver, newest of Canadian hotels, situated in the heart of the theatre and shopping district, on Georgia Street, the main artery of approach to Stanley Park and the Lions Gate Bridge.

"The Golden Inn of the Golden West" is a phrase that has been coined to describe this magnificent establishment. It was opened for the first time in May of this year and soon thereafter received Their Majesties the King and Queen, whose party occupied an entire floor, designed so that all its rooms are convertible into a single large suite.

The hotel was designed by architects of the Canadian National Railways and follows the chateau style characteristic of Canadian National hotels. There are 600 guest rooms, each equipped with private bath and furnished with the most exquisite care.

Public rooms include ballrooms, banqueting rooms, dining rooms, both private and public; a supper dance room, and reception

The Empress Hotel, Victoria, B. C.

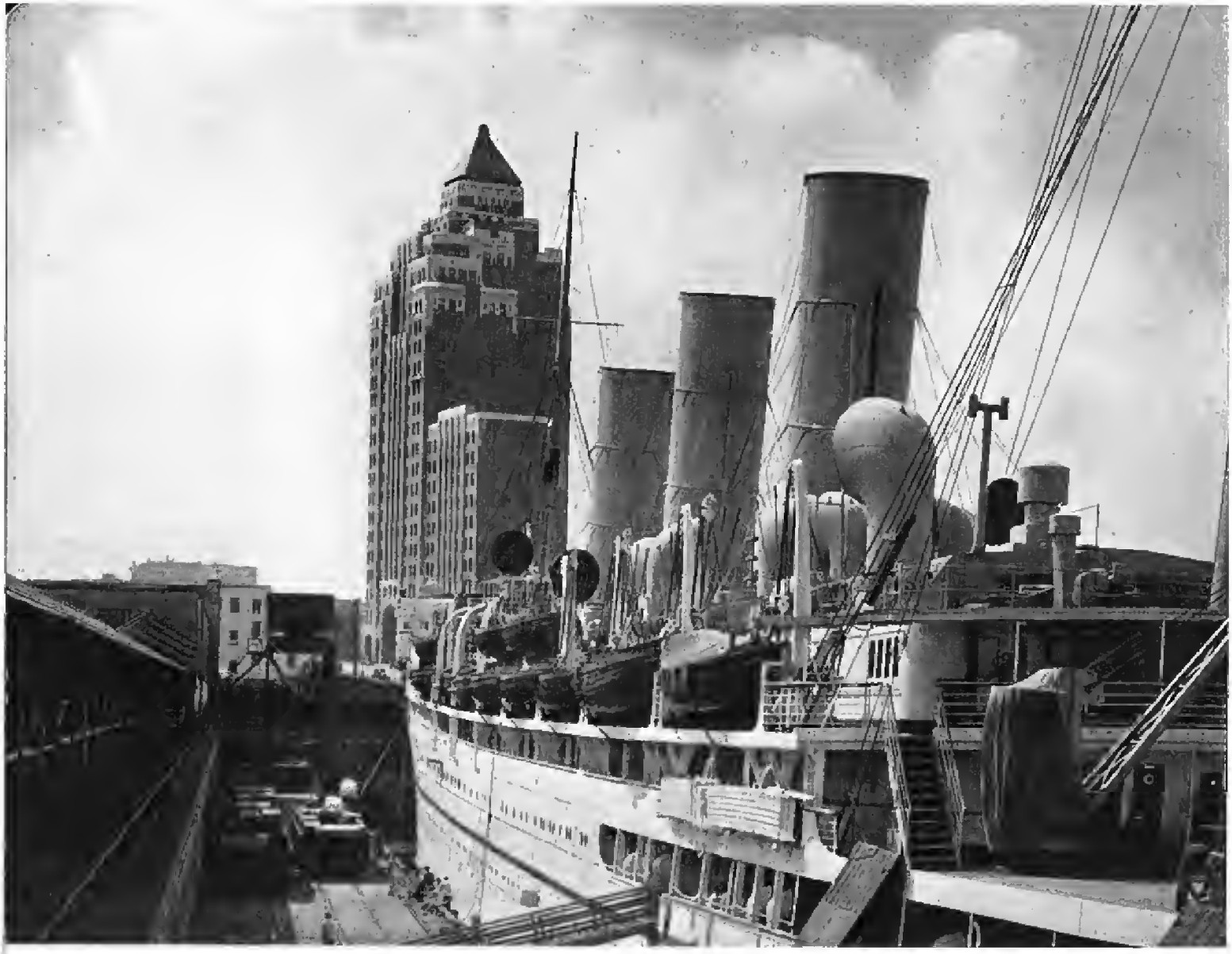
rooms. All are furnished on a magnificent scale, the decorations including murals dealing with the early history of Vancouver and British Columbia.

Vancouver, so ideally situated, so ideally served, is a natural centre for the tourist and holiday seeker. In its immediate environs it embraces facilities for every type of sport, and in many sports it has produced champions of its own.

The city, in addition, provides a jumping-off place to some of the world's most famous holiday resorts.

There is Jasper National Park and Banff National Park, actually over the provincial boundary in Alberta, but both within overnight reach of Vancouver by train—Jasper on the main transcontinental line of the Canadian National Railways, Banff on that of the Canadian Pacific Railway.

There are, in British Columbia itself, several famous national parks, preserves, like Jasper and Banff, of the National Government. They include Revelstoke, Yoho, Glacier, and Kootenay. Within them, beside the wealth of mountain scenery — "the



THE MARINE BUILDING, VANCOUVER, B. C.

thousand Switzerlands in one"—with their gigantic peaks, awe-inspiring glaciers, mountain trails and beautiful emerald lakes, the friendly visitor will find game in abundance, with many of the species totally lacking in the native shyness of the wild. The playful black and brown bear, deer and mountain sheep, the mountain goat, the moose and caribou; even the noble bison, once lord of the prairies, may be seen in goodly numbers.

World-renowned, of course, as playgrounds shared by the peoples of all nations, are Banff and Jasper.

Internationally famed golfers have taken part in the annual tournaments on their fine courses; big game hunters from all parts of the world have used them as bases for their expeditions; the shoulders of their mighty hills are beloved of the ski-er; while mountain climbing and trail riding bring droves of devotees.

In these two playgrounds visitors may enjoy a rough out-of-doors life or the comforts of modern living in hotel style. At Jasper it is Jasper Park Lodge, the term covering many buildings of the chalet or bungalow

Jasper Park Lodge, Canadian National Railways

type. In Banff Park there is Banff Springs Hotel, "a baronial castle set amid rugged grandeur," where one can follow a hike, game of tennis or golf, with the luxury of a swim in a sulphur pool. In Banff Park also, forty miles farther west, is Chateau Lake Louise, looking out upon that majestic jewel of a mountain lake to whose name every traveller thinks it but natural spontaneously to prefix the adjective "beautiful."

Rare fishing is to be had in the streams and lakes of these mighty hills.

But Vancouver finds splendid playgrounds nearer home, and the Lions Gate Bridge was welcomed by the people the more warmly because it represents a step in providing for more ready access to these very areas.

The whole of the rugged terrain on the North Shore, facing the waterfront of Vancouver across Burrard Inlet, is a natural playground. Already, on the slopes of Hollyburn Ridge, an hour's climb from Capilano Estates, the young people of Vancouver throng in hundreds—in summer to hike up and down its trails, in winter to ski and snowshoe. The summits of Grouse and

Banff Springs Hotel, Canadian Pacific Railway

Seymour Mountains, and of many another, are similarly popular. A movement is under way, sponsored by the Government of British Columbia, the City of Vancouver, and the municipalities of the North Shore, to convert twenty square miles of this region into a public recreation park, made accessible by good roads.

Fifty miles northward from Vancouver, and accessible by coastal steamer and by mountain trails for the use of hikers and riders, lies entrancing Garibaldi Park, which has been set aside by the province for future development.

Don Munday, British Columbia's premier alpinist, has written a lyrical description of this famous park, which few know better than he.

"Challenging crests of rock and snow towering above gleaming snowfields and curving glaciers; broad, flowery alp-lands and park-like plateaus; lakes crystal clear or gem-like with glacial blue and green water; richly-coloured volcanic cones, old craters, wide lava flows, and basaltic columns; high upland ridges overlooking mysterious depths of wooded valleys, with glimpses of distant seascape—yet lifting the eyes upward to commanding peaks—this is Garibaldi Park."

LAKE GARIBALDI PARK, BRITISH COLUMBIA

Long before the Lions Gate Bridge was on its way to becoming a reality, far-sighted citizens in Greater Vancouver began agitating for a motor road that would lead out of West Vancouver, along the picturesque shores of Howe Sound, to the northwest, and eventually bring the tourist into the heart of this alpine wonderland. The completion of the bridge has hastened the movement, and today there are indications that before long the Dominion and province, between them, will provide means to build the road.

The waters around Vancouver provide attractions of their own. Hardly a part of the coastal region or interior has not some virtue in the eyes of fishermen. It is a peculiar virtue of the Lions Gate Bridge from the fisherman's point of view that it leads one to a trout stream as desirable as any in the province.

This is the Capilano Creek, eastern boundary of Capilano Estates, specially popular for its dry fly fishing, where the enthusiastic nature lover again has the majestic twin Lions to gaze upon his play.

The yachtsman finds diversion at his front door in Vancouver. English Bay, whose waters wash the shores of Stanley Park and

HOLLYBURN SKI GROUNDS, OVERLOOKING THE LIONS GATE BRIDGE

West Vancouver impartially, is a paradise for the man or woman who loves a sail overhead. The regattas of the Royal Vancouver Yacht Club are famous and colourful occasions.

But sport in and around Vancouver is chiefly the relaxation of the amateur. Before there is time for play there is a time for work. The Greater Vancouver whose sturdy growth gave reason for the construction of the Empire's largest suspension bridge finds work in plenty for its people, supporting them on the wealth that pours from a rich and varied hinterland.

Foremost among the great industries that support the city is lumbering. And nothing better symbolizes the modern trends in this industry than its subsidiary, the pulp and paper industry, which, operating six mills at present, employs a total capital of $50,000,000, with a normal payroll of $5,600,000 divided between 3500 direct employees.

The largest of the mills is that owned by the Powell River Company, depicted in this brochure, with its capacity of 215,000 tons of newsprint annually. In addition, there are two bleached sulphite pulp mills owned by the B. C. Pulp and Paper Company, one at Port Alice, the other at Woodfibre, with a combined capacity of 200,000 tons; Pacific Mills, at Ocean Falls, capacity 100,000 tons, manufacturing newsprint, kraft, kraft pulp and sulphite specialties; New Westminster Paper Company, at New Westminster, a specialty mill manufacturing 10,000 tons annually of sulphite tissues and wrapping paper; and Sidney Roofing Company, Victoria, manufacturing 12,000 tons annually of building and roofing paper and paper board.

British Columbia normally exports eighty-five to ninety per cent of its total annual production of 455,000 tons of pulp and paper products. Its principal markets, in order of importance, are the United States, the Orient, Australasia, United Kingdom, Europe, and South America.

The province is in a fortunate position with respect to this industry. Its existing mills are all at tidewater, and excellent undeveloped sites, similarly situated, are available. Furthermore, the province has large reserves of suitable timber.

The phenomenal increase in the use of paper and paper products over the past two decades has resulted in the depletion of the forest reserves of many producing countries. The tendency of future development in the industry will be to those territories having

"The Lions" from Capilano River

The Powell River Paper Company's Plant, British Columbia

excess reserves. British Columbia is outstanding in this respect, and the future expansion of the pulp and paper industry in the province seems assured.

Mining is another basic industry that is rapidly assuming increased importance in British Columbia's economic life. The names of the Cariboo and Bridge River mining districts, scenes of immense activity in recent years, have today world-wide significance. Another name, equally significant, is Trail, the interior town that is the seat of the Consolidated Mining and Smelting Company of Canada Limited, largest producer of non-ferrous metals in the British Empire.

The immense mines, mills, refineries and extraction plants of "Consolidated" give direct employment to approximately 7000 men, of whom 1800 work in the engineering and construction departments alone. The centre of activity at Trail, of course, is the great lead smelter, whose blast furnaces treat the ores from the famous Sullivan lead and zinc mine, which the company owns.

Trail is equally famous for its fertilizers, and there are plants for every type of work with the non-ferrous metals, such as the extraction of silver, bismuth, antimony, cadmium, sulphuric acid and sulphur, ammonia and phosphate.

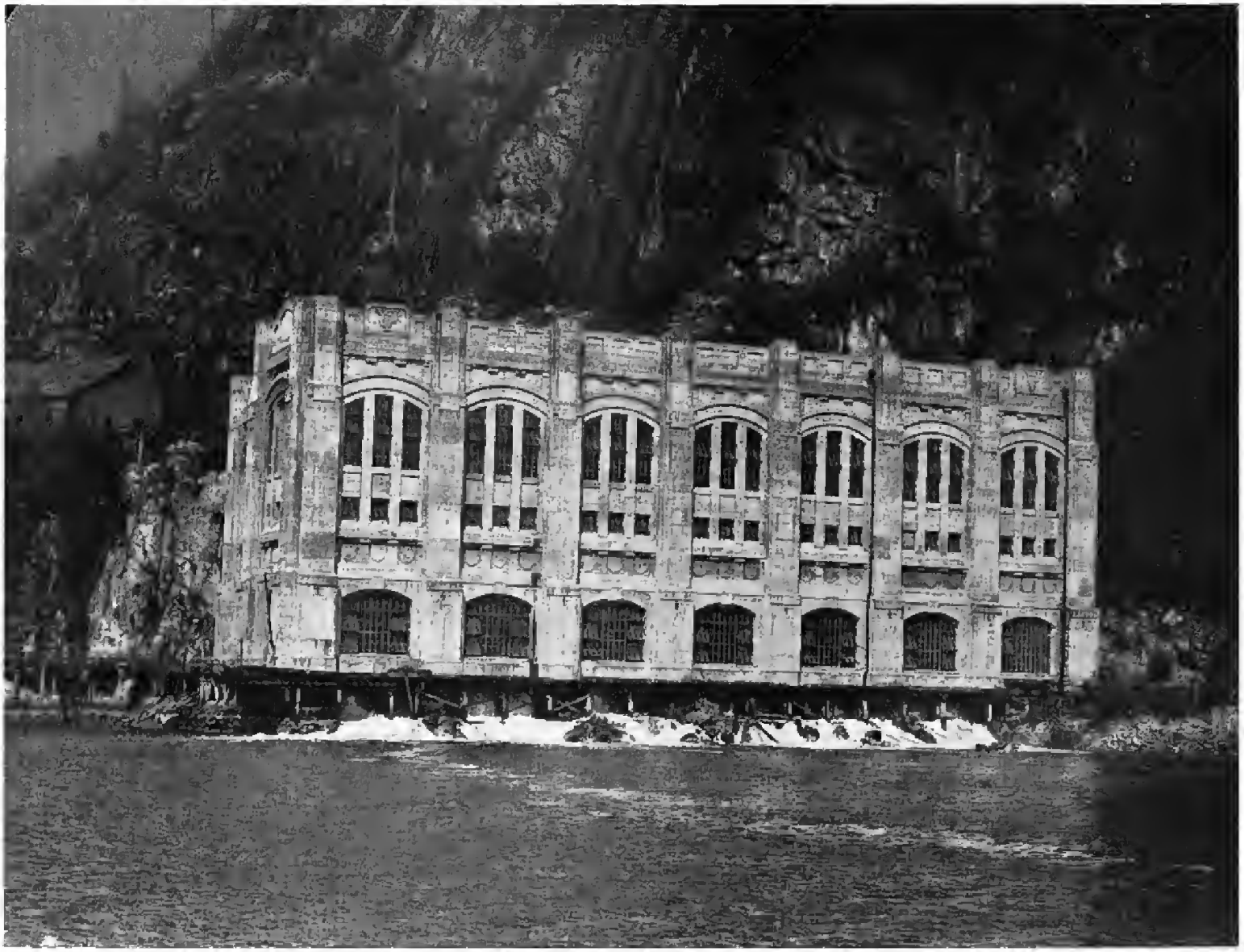
The Consolidated Mining & Smelting Company, Trail Smelter

So immense are the operations at Trail and its satellite mines that "Consolidated," a subsidiary of the Canadian Pacific Railway Company Limited, acquired, some years ago, a subsidiary of its own in the West Kootenay Power and Light Company. Today this power company has a total installed generating capacity of 226,000 horsepower, with four plants on the Kootenay River, serving a large area of interior British Columbia.

British Columbia indeed is fortunate in the fact that it has abundant cheap water power. Greater Vancouver, together with the adjacent lower mainland, the fertile Fraser Valley, and a considerable part of the immediate hinterland, is amply served by the power plants of the British Columbia Power Corporation.

Newest of five power plants supplying electrical energy for Vancouver and its immediate vicinity is Ruskin, with a capacity of 94,000 horsepower. All these plants are fairly close to the city, its rugged mountain ramparts providing excellent sites.

A city that can find utility in its scenery is indeed fortunate. The same glorious, snow-capped peaks along the North Shore that help to power its factories, light its buildings and drive its street cars also provide it with abundance of cool, remarkably soft water.



Lake Buntzen Power Plant of the B. C. Electric Railway Company

The narrow valleys of the Capilano, Seymour and Coquitlam Creeks, covered with evergreen forests, were acquired years ago by the Greater Vancouver Water Board, an authority embracing three cities and five municipalities having an area of 290 square miles and half the population of the province.

The entire area above its intakes on Capilano Creek, Seymour Creek and Coquitlam Lake is owned or controlled by the Board. Its water is delivered by gravity, and in its natural state, without treatment of any kind.

Capilano water flows under First Narrows, hard by Lions Gate Bridge, in a tunnel; Seymour water through flexible jointed pipes on the floor of Second Narrows; both of which serve Vancouver; while from Coquitlam Lake water is brought in steel mains to serve the neighbouring city of New Westminster and the municipalities of Coquitlam and Richmond.

So much for material advantages. Whatever these may be, no community is sounder than its schools. Vancouver and the adjoining communities are well equipped in this respect, Vancouver alone boasting 69 public

THE MAIN STORAGE SYSTEM OF THE GREATER VANCOUVER WATER BOARD

elementary and secondary schools, with those of the suburban municipalities bringing the total to around 100. There are in addition about 90 private schools in Greater Vancouver.

The crown of the educational system of the province is the University of British Columbia, youngest of the twenty-three universities of Canada, located at Point Grey, six miles from Vancouver.

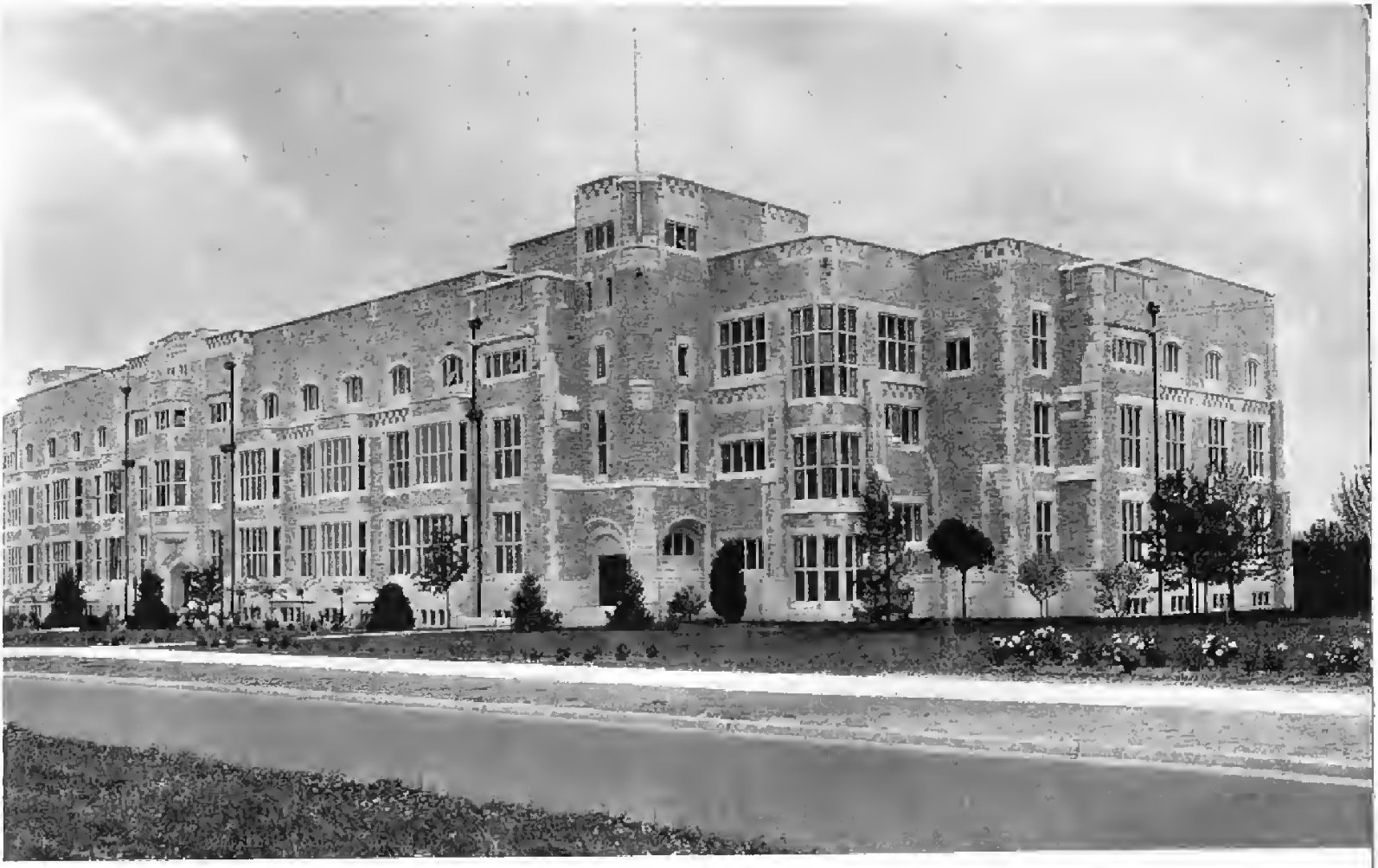
The physical plant, consisting of twenty major and many smaller buildings, is designed for 1,500 students, but in the 1937-38 season more than 3,000 were enrolled in the three faculties of Arts and Science, Applied Science and Agriculture.

The site of the University is most beautiful, overlooking as it does magnificent marine and mountain views. It has an area of 548 acres, the sea, 200 feet below, forming more than half the boundary of the campus.

With practically no endowment, the University has an income of $800,000 a year, principally from a grant made annually by the Provincial Legislature, and from student fees.

THE LIBRARY OF THE UNIVERSITY OF BRITISH COLUMBIA

The staff is headed by Dr. R. E. McKechnie, who has been elected Chancellor continuously since 1918, and Dr. L. S. Klinck, completing twenty years as President, consists of ninety men and women of professional rank, with about an equal number of honorary or special lecturers, instructors and assistants. The University is governed by a Senate, responsible for educational policies, and a Board of Governors, charged with financial direction. A young University, but one that already has sent out graduates who have become famous in many fields, in many parts of the world. It is an asset that, as British Columbia expands, as it inevitably must, will prove more and more valuable. It stands at the western tip of the City, as does the Lions Gate Bridge at the western extremity of the Harbour, a monument to faith and foresight.



Administration and Engineering Buildings of The University of British Columbia

A Bathing Beach at Vancouver

Some Facts About Vancouver and British Columbia

British Columbia is not blessed with great numbers of people, nevertheless it enjoys an important place in the economy of the Dominion of Canada. This may be gathered from the fact that in 1937 the Province had a total trade of $280,233,151, as compared with $237,202,192 in 1936.

Total exports, 1937, $162,231,955.

Total imports, 1937, $118,001,196.

Favourable balance, $44,230,759.

Exports to United Kingdom, $43,993,806.

Exports to United States, $43,207,446.

Exports to Japan, $12,479,025.

Exports to Australia, $8,725,906.

Other exports, $12,044,644.

Trade with rest of Canada, $34,230,862.

Vancouver's rise as a seaport is reflected in reports of the National Harbours Board. The City today stands second only to Montreal in port business. The fact that the harbour of Vancouver is an all-year port is an important contributing factor.

In 1938, some 984 deep-sea vessels called in Vancouver, with a tonnage of 4,028,308; coastal vessels amounted to 21,306, with tonnage of 7,591,185. The total number of vessels arriving and departing was 22,290, their tonnage 11,620,493.

PART OF VANCOUVER'S SKY LINE

Comparative figures for the Port of Montreal show deep-sea arrivals and departures totalling 1,133, tonnage 4,473,961. Coastal vessels numbered 4,589, tonnage 4,105,296. Others, seven with a tonnage of 10,262. Montreal's total: 5,729 vessels, 8,589,519 tons.

SOME STATISTICS

Area of Province, 349,970 square miles.

Population of British Columbia, 761,000.

Population of Greater Vancouver, 360,000.

Population of Vancouver, 1931 census, 246,593.

Estimated population, 1939, 270,000.

Telephones in Vancouver, 75,000.

Automobiles, 70,000.

Hotels of all classes, 98.

Apartment houses, 752.

Hospitals and nursing homes, 56.

The city is served by five railroad systems, using three terminals, and by 53 steamship lines. Its grain elevators provide storage capacity for 17,843,000 bushels.

The wealth of the city is reflected in the fact that 58 per cent of its homes are owned by their occupants. The city maintains 54 elementary schools, 11 high schools and four junior high schools, besides 90 private schools. Its public schools are attended by 45,000 pupils. It has 224 churches of all denominations and 41 theatres. It has 99 park areas, with a total of 2,356 acres. The British Columbia Power Corporation, with nine electric and gas plants, services 125,000 light and power customers and 48,000 gas customers.

An Orchard in the Okanagan Valley, British Columbia

In all parts of the British Empire, indeed throughout the world, two names are synonymous with British Columbia. They are "Okanagan" and "McIntosh Red."

The rich Okanagan Valley, in the southern interior of British Columbia, is the centre of the fruit-growing industry of the province, one of the richest in the world. Sixty years ago, the famous valley was given over to cattle ranching, its soil chiefly supporting sage brush. But in the eighties fruit growers from old Ontario began drifting there. Irrigation methods—later expanded by the expenditure of millions of dollars—turned the valley into one vast orchard.

Today, the annual turnover of the valley's orchards and its subsidiary industries—packing, trucking, box-making, canning, wine-making and transportation services—approximates $35,000,000, and gives employment to thousands of men and women.

In apple orchards alone there is an investment of $50,000,000.

The Okanagan apple has been instrumental in spreading the Okanagan's fame. More than 5,500,000 boxes were produced in 1938, and about 2,000,000 of them went to the United Kingdom, the valley's chief market.

The McIntosh Red, practically a monopoly of the valley, gave 2,000,000 boxes, and of this fruit, which sells at a premium on any market, seventy-five per cent was exported, chiefly to the United Kingdom. The valley also produces most of the well-known varieties.

VANCOUVER A CITY OF CHAMPIONS

VANCOUVER, with a mild, year-round climate (the average temperature is 48.7 degrees) is a paradise for the lovers of sports. Largely for this reason, perhaps, the prowess of its sportsmen is a thing about which its citizens are justly proud.

Two names in the world of sport leap at once into the mind when the name of Vancouver is mentioned. There is Percy Williams, who at the 1928 Olympic Games at Amsterdam, made history by winning both the 100 yards and the 200 yards.

Then there is "Jimmy" McLarnin, the former world's welterweight champion, who rose to fame in Vancouver rings and still calls the city his home.

Ski-ing, cycling, soccer, basketball, lacrosse, badminton, tennis — these are a few other sports that have helped make Vancouver a name to conjure with in the sporting world.

In hockey, too, one finds such names as Frederick "Cyclone" Taylor, who helped the Vancouver Millionaires win the Stanley Cup in his day, and was hailed as the greatest hockey player of his time.

Ski-ing has recently brought honour to the city through the skill of Gertrude Wepsala, the new Dominion champion. In tennis, Douglas Cameron, who was seeded No. 1 in Canada in 1937, and is a member of the Canadian Davis Cup team, placed second in Dominion rankings last year. But the city had a most remarkable record in national women's rankings. Five Vancouver girls took the first five positions, Eleanor Young, Jean Milne and her sister, Susie Milne, Phyllis McCrimmon and Caroline Deacon.

Vancouver, and indeed Victoria, too, support excellent rugby and cricket leagues, considered among the best in the Dominion. In Association football, the Vancouver league is in a class well ahead of any other in the Dominion. Winning national championships, which are played annually, has become almost a habit, particularly of recent years. One great team in particular, the New Westminster Royals, has won the championship, and with it the English Association Trophy, four times since 1928. English and Scottish international touring teams have a high respect for the players, most of them native sons, whom they have met on Vancouver grounds.

In basketball, Vancouver supplied the national champions, the Western Sport Centre, in 1938. This year the Western team was defeated in the British Columbia finals, but the victors, the Victoria Dominoes, went on from there to defeat the best that the other provinces could send against them, and to retain the trophy.

Lacrosse has for many years been a leading sport in Vancouver and New Westminster. The "Royal City," as New Westminster is called, has many times brought the Mann Cup, emblem of the Dominion championship, to British Columbia, and Vancouver is not far behind New Westminster in championship laurels.

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SHARE CAPITAL

Authorized		*Issued*
500,000	Shares of $1.00 each	$ 500,000

LOAN CAPITAL

$3,000,000	5% First (closed) Mortgage Thirty-year Sinking Fund Bonds	$2,700,000
$3,000,000	5% Second Mortgage Forty-year Bonds	$3,000,000

PARTICULARS OF FIRST (CLOSED) MORTGAGE 30-YEAR SINKING FUND BONDS

Dated April 1st, 1937 Maturing April 1st, 1967

The principal of all of the said Bonds and the interest and premiums (if any) thereon and all sums which may at any time become payable thereon, whether at maturity or on redemption or otherwise, shall be payable in lawful money of the Dominion of Canada at the principal office of the Royal Bank of Canada, in the Cities of Vancouver, Toronto or Montreal in the Dominion of Canada. The Second Mortgage Bonds follow the same lines and are secondary only to the First Mortgage Bonds.

THE COMPANY

The First Narrows Bridge Company Limited was incorporated in December, 1926, under the British Columbia Companies Act, and has legislative powers to construct, own and operate a vehicular and pedestrian toll bridge across the First Narrows, between Stanley Park and the north shore of Burrard Inlet, the entrance to Vancouver Harbour, together with a fifty-year exclusive franchise dating from the completion of the bridge—November 14th, 1938—granted by the City of Vancouver and the Municipalities of North Vancouver and West Vancouver. By the terms of this franchise the City of Vancouver has the right to acquire the bridge at the expiration of fifty years by paying the value of the structure at that time.

THE BRIDGE

The Bridge is known as the "Lions Gate Bridge," and is a suspension-type bridge designed on the latest method of using rope strands to form the main cables, replacing the older method of using bridge wires laid

VANCOUVER AND THE BRIDGE, LOOKING SOUTH

parallel to each other. It has a paved roadway 29 feet wide, accommodating three lanes of vehicular traffic; it has also two 4-foot sidewalks. The central span is 1500 feet clear and approximately 200 feet above mean high water in the centre. The total length of the Bridge with approaches is 5978 feet. The Bridge is the largest suspension bridge in the British Empire, and while of lesser magnitude, compares favourably with the Golden Gate Bridge at San Francisco.

The total cost of the bridge, approaches, Park roadway, franchises and right-of-ways, and after providing for ample working capital was $5,700,000.

TERRITORY SERVED

The bridge spans the harbour of Vancouver, which is one of the largest natural harbours in the world. The total area of the harbour is 48 square miles, with a total shore line of 98 miles, and affording a safe anchorage at all times for ships of the largest tonnage.

The City of Vancouver lies on the south side of this harbour and the "Lions Gate" Bridge makes an important contribution to the transportation system of Greater Vancouver, and materially reduces the time between the City and the North Shore.

Before the erection of the Lions Gate Bridge, Vancouver Harbour was crossed by two Municipal ferry systems, one direct to West Vancouver, the other to North Vancouver, and by the Second Narrows Bridge, with only one lane of vehicular traffic in each direction; it is also a railway transfer bridge.

We wish to acknowledge the assistance rendered by Mr. Leonard Frank, A.R.P.S., Mr. Don Munday, The Sun Publishing Company Limited and anonymous friends *in producing this Brochure.*